

Amstrad



MINI 2000 MINI HI-FI REMOTE CONTROL AUDIO SYSTEM SERVICE MANUAL

TECHNICAL SPECIFICATIONS

Compact Disc	Front loading, 24 track programming, music search, skip up or down, memory repeat
Radio	Tuning: PLL with 15 presets
	Frequency Range: AM 531 - 1602 kHz
	FM 87.5 - 108 MHz Stereo
Antenna	AM: Built in ferrite bar
	FM: Band line
Tape A	Playback/pause/stop & eject/fast forward/fast rewind
Tape B	Playback, record, pause/stop & eject/fast forward/fast rewind/play/record Auto stop, one touch recording, hi-speed dubbing, continuous play
Audio	5 band graphic equaliser, +/-6dB
Display	Back light LCD
Speakers	10.5cm, full range, x 2
Connections	3.5mm stereo headphone; speaker socket x 2; aux input; phono input; microphone input, FM ant.
Accessories	Remote control
Power Supply	AC 220 - 240V 50 Hz
Dimensions	Cassette unit: 280mm(W) x 285mm(D) x 205mm(H)
	CD/Radio unit: 280mm(W) x 285mm(D) x 205mm(H)
	Speaker unit: 410mm(W) x 118mm(D) x 205mm(H)
Weight	11.5 kg including speakers

MODEL: MCS-9201 (MINI2000)

ALIGNMENT INSTRUCTION - CASSETTE SECTION

STEP	ITEM	TEST TAPE	CONNECTION	ADJUSTMENT	OUTPUT
1.	SPEED CHECK AND SENSE CHECK	PLAY BACK TEST TAPE MTT-111N (3KHz)	WOW & FLUTTER METER CONNECT TO L-CH AND R-CH AUDIO OUTPUT WITH 4 OHM LOADS.	ADJUST VR6601 (NOR 3KHz)	(1) NOR - 3KHz OUTPUT, HIGH - APPR. 5.7KHz (2) VARIATION OF OUTPUT SHOULD NOT EXCEED 2 dB PER CHANNEL
2.	MAGNETIC HEAD ADJUSTMENT	PLAY BACK TEST TAPE MTT-114N (10KHz)	AC VOLTMETER AND OSCILLOSCOPE CONNECT TO L-CH AND R-CH AUDIO OUTPUT WITH 4 OHM LOADS.	HEAD FIXING SCREW	FOR MAX OUTPUT, VARIATION OF OUTPUT SHOULD NOT EXCEED 3dB AT SAME CHANNEL.
3.	OSCILLATOR FREQUENCY ADJUSTMENT	RECORD POSITION & HEAT SWITCH S6601 AT RECORDING POSITION.	FREQUENCY COUNTER W/500pf CONNECT TO C667 OR C668. (TP1)	ADJUST BIAS OSCILLATOR COIL T6601.	OSC FREQUENCY : 72KHz
4.	ERASING VOLTAGE CHECK		AC VOLTMETER CONNECT TO ERASING HEAD. (TP2)		ERASING VOLTAGE : 30V
5.	BIASING VOLTAGE CHECK		AC VOLTMETER ACROSS TAPE A R/P HEAD L-CH OR R-CH.		BIAS VOLTAGE : AC 18V
6.	FREQUENCY RESPONSE CHECK	PLAY BACK TEST TAPE MTT-257N (125/1K/6.3KHz)	AC VOLTMETER AND OSCILLOSCOPE CONNECT TO L-CH AND R-CH AUDIO OUTPUT WITH 4 OHM LOADS.	VOL. CONTROL ADJUST TO REFERENCE OUTPUT (BALANCE CONTROL AT MID. POSITION, EQ. CONTROL AT FLAT POSITION).	THE OUTPUT SHOULD BE WITHIN THE SPECIFICATION
7.	CHANNEL SEPARATION CHECK	PLAY BACK TEST TAPE MTT-141N			THE R-CH & L-CH OUTPUT DIFFERENCE SHOULD BE WITHIN THE SPECIFICATION.

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ALIGNMENT INSTRUCTION - DTS SECTION

STEP	ITEM	TEST EQUIPMENT	CONNECTION	ADJUSTMENT	REMARK / OUTPUT
1.	DC-DC CONVERTER FREQ. ALIGN. (FIG. 8)	FREQUENCY COUNTER (HI INPEDANCE)	TAKE OUT SIGNAL FROM (TP8) IN SERIES WITH A 5PF CERAMIC CAPACITOR	ADJUST L301 TO GET MAX. OUTPUT AT 2.8MHZ	(1)FUNCTION SWITCH AT 'RADIO' POSITION (2)OSCILLATION FREQUENCY IS 2.8MHZ +- 20KHz
2.	DC-DC CONVERTER VOLTAGE CHECK (FIG. 9)	DC VOLTEMETER	TAKE OUT SIGNAL FROM (TP10)		VOLTAGE IS APPROXIMATELY DC 12V +- 0.5

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ALIGNMENT INSTRUCTION - FM STEREO SECTION

STEP	ITEM	TEST EQUIPMENT	SIGNAL IN	SIGNAL OUT	ADJUSTMENT	REMARK
1.	PILOT SIGNAL ADJUST (FIG. 3)	(1)FREQUENCY COUNTER		TAKE OUT SIGNAL FROM (TP6) PARALLEL WITH A 220K OHM RESISTOR TO GROUND (TP7).	THE READING SHOULD BE 19KHz	(1)BAND SWITCH IN FM POSITION (2)MODE SWITCH IN ST POSITION
2.	SEPARATION CHECK 100MHz (FIG. 4)	(1)FM STEREO SIGNAL GENERATOR (2)OSCILLOSCOPE (3)AC VOLTMETER	INJECT THE STEREO L-CH RF SIGNAL DIRECTLY TO ANTENNA INPUT (TP1).	TAKE OUT SIGNAL FROM AUDIO O/P L-CH (TP9) AND R-CH (TP10) WITH 4 OR 8 OHM LOADS.	THE R-CH OUTPUT IN MIN. READING ON AC VOLTMETER	(1)PRESS 'UP' OR 'DOWN' TO 100MHz (2)SET VOL. CONTROL TO MAKE L-CH TO REF. OUTPUT
3.	SEPARATION CHECK 100MHz (FIG. 4)	AS STEP 2	INJECT THE STEREO R-CH RF SIGNAL DIRECTLY TO ANTENNA INPUT (TP1).	AS STEP 2	THE L-CH OUTPUT IN MIN. READING ON AC VOLTMETER	SET VOL. CONTROL TO MAKE R-CH TO REF. OUTPUT
4.	REPEAT STEP 2,3 AND THEN RECORD THE READING AS CHANNEL SEPARATION.					
5.	STEREO IND. ON SENS. 100MHz (FIG. 4)	AS STEP 2	INJECT THE STEREO RF SIGNAL WITH 60dB DIRECTLY TO ANTENNA INPUT (TP1).	AS STEP 2		THE STEREO LED MUST BE ON
6.	SAME AS STEP 5, DECREASE THE INPUT SIGNAL FROM THE GENERATOR UNTIL THE STEREO IND. OFF THEN INCREASE THE INPUT SIGNAL GRADUALLY UNTIL THE STEREO IND. JUST ON. RECORD THIS READING AS STEREO IND. ON SENSITIVITY.					

MODEL: MCS-9201 (MINI2000)

ALIGNMENT INSTRUCTION -

AM SECTION

STEP	FREQUENCY	TEST EQUIPMENT	SIGNAL IN	SIGNAL OUT	ADJUSTMENT	REMARK
1.	IF 450KHz (FIG. 5)	(1)AM IF SWEEP GENERATOR (2)ALIGNMENT OSCILLOSCOPE	LET THE AM ANTENNA COIL L402 CLOSE TO THE LOOP ANTENNA OF AM IF SWEEP GEN.	TAKE OUT SIGNAL FROM (TP5) IN SERIES WITH A 0.1UF CER. CAP.	ADJUST T402 TO GET MAX. OUTPUT AT 450KHz.	(1)BAND SWITCH IN AM POSITION (2)VOL. AND EQ. CONTROL IN MIN. & FLAT POSITION RESP. (3)PRESS 'M5' TO 1602KHz
2.	LOW END 531KHz (FIG. 5)	(1)AM RF SWEEP GENERATOR (2)ALIGNMENT OSCILLOSCOPE	LET THE AM ANTENNA COIL L402 CLOSE TO THE LOOP ANTENNA OF AM RF SWEEP GEN.	AS STEP 1	ADJUST L404 TO GET MAX. OUTPUT AT 531KHz.	PRESS 'M1' TO 531KHz
3.	HIGH END 1602KHz (FIG. 5)	AS STEP 2	AS STEP 2	AS STEP 1	FIXED	PRESS 'M5' TO 1602KHz
4.	TRACKING 603KHz (FIG. 5)	AS STEP 2	AS STEP 2	AS STEP 1	ADJUST L402 TO GET MAX. OUTPUT AT 603KHz.	PRESS 'M2' TO 603KHz
5.	TRACKING 1404KHz (FIG. 5)	AS STEP 2	AS STEP 2	AS STEP 1	ADJUST C411 TO GET MAX. OUTPUT AT 1404KHz.	PRESS 'M4' TO 1404KHz
6.	REPEAT STEP 4,5 AND THEN STEP 2,3,4,5 UNTIL NO FURTHER IMPROVEMENT CAN BE MADE.					
7.	TRACKING 999KHz (FIG. 5)	AS STEP 2	AS STEP 2	AS STEP 1	MAKE SURE THE OUTPUT AT 999KHz SHOULD BE WITHIN THE SPECIFICATION.	PRESS 'M3' TO 999KHz

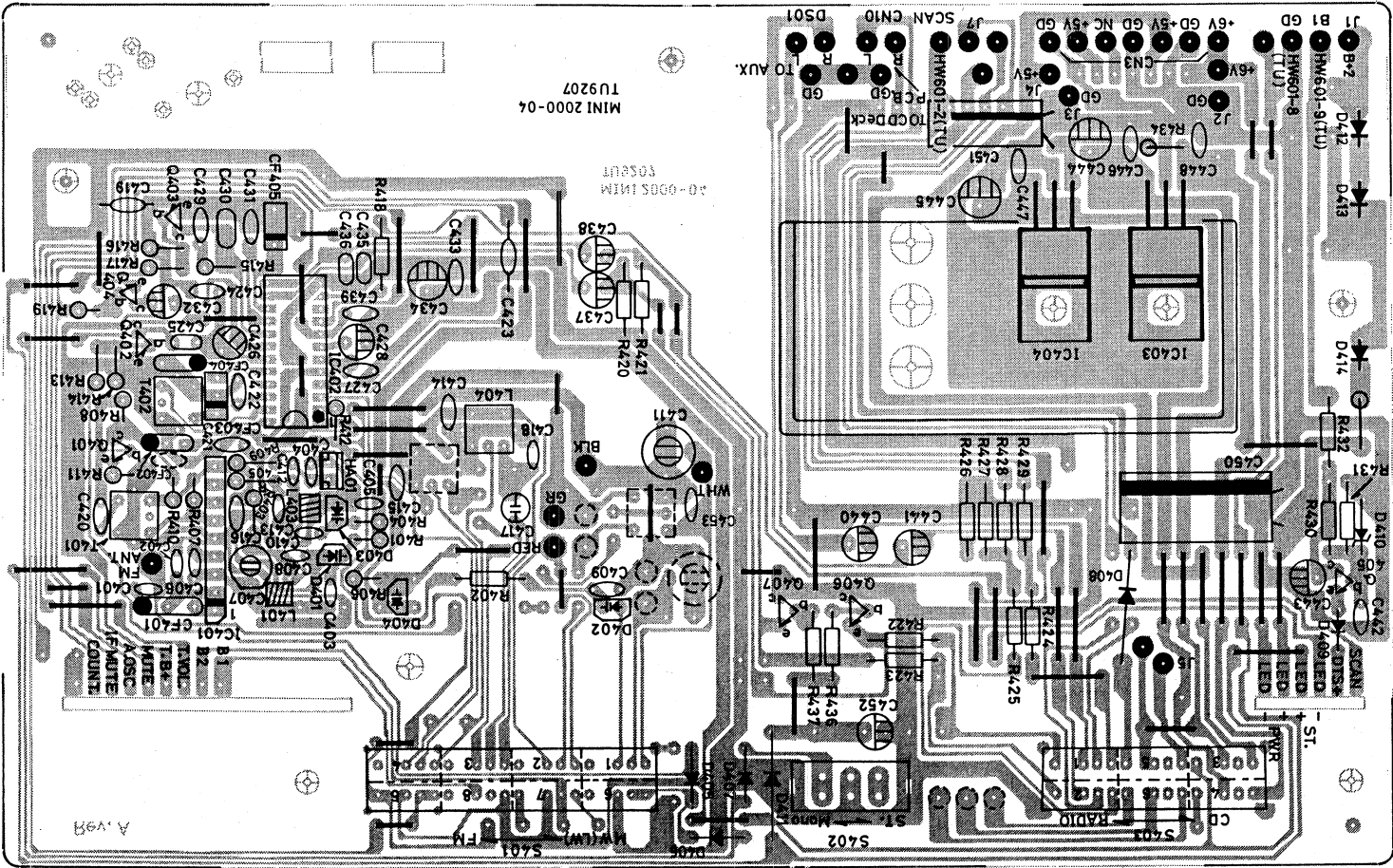
MODEL: MCS-9201 (MINI2000)

ALIGNMENT INSTRUCTION -

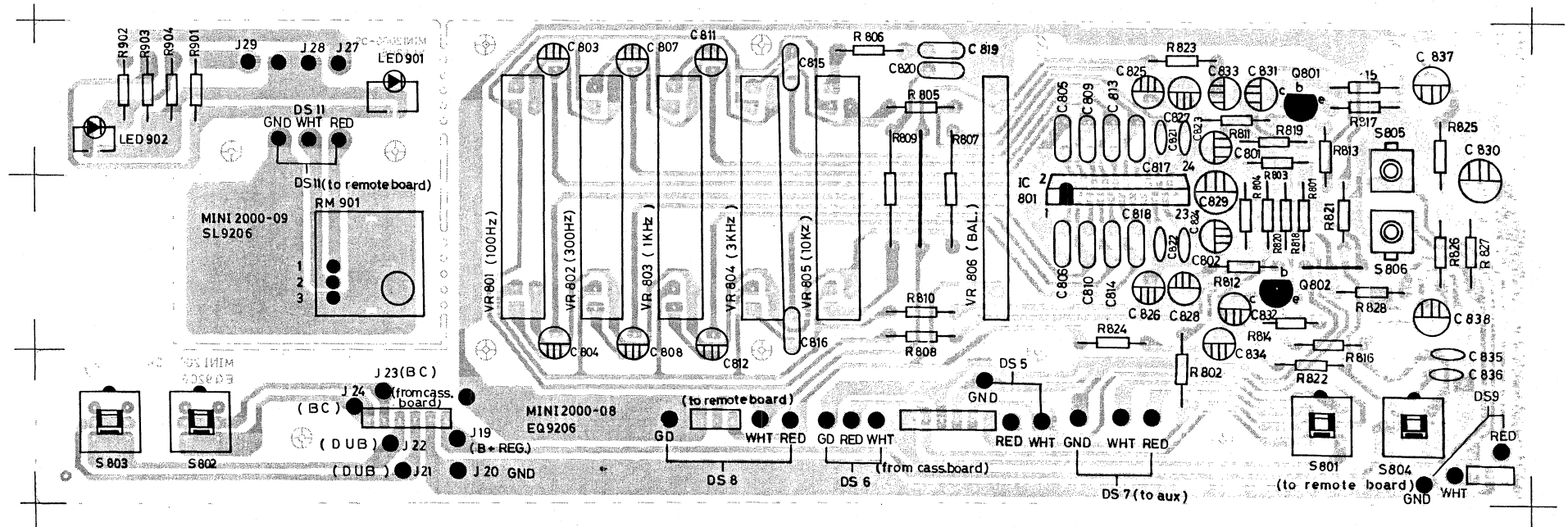
FM SECTION

STEP	FREQUENCY	TEST EQUIPMENT	SIGNAL IN	SIGNAL OUT	ADJUSTMENT	REMARK
1.	IF 10.7MHz (FIG. 1)	(1)FM IF SWEEP GENERATOR (2)ALIGNMENT OSCILLOSCOPE	INJECT THE IF SIGNAL THROUGH 100PF CAP. TO (TP2).	TAKE OUT SIGNAL FROM (TP4) IN SERIES WITH A 0.1UF CER. CAP.	ADJUST T401 TO GET THE BEST 'S'CURVE WITH CENTRE AT 10.7MHz	(1)BAND SWITCH IN FM POSITION (2)VOL. AND EQ. CONTROL IN MIN. & FLAT POSITION RESP. (3)PRESS 'M5' TO 108MHz
2.	LOW END 87.5MHz (FIG. 2)	(1)FM RF SWEEP GENERATOR (2)ALIGNMENT OSCILLOSCOPE	INJECT THE RF SIGNAL DIRECTLY TO ANTENNA INPUT (TP1).	AS STEP 1	ADJUST L403 TO GET MAX. OUTPUT AT 87.5MHz.	PRESS 'M1' TO 87.5MHz
3.	HIGH END 108MHz (FIG. 2)	AS STEP 2	AS STEP 2	AS STEP 1	FIXED	PRESS 'M5' TO 108MHz
4.	TRACKING 90MHz (FIG. 2)	AS STEP 2	AS STEP 2	AS STEP 1	ADJUST L401 TO GET MAX. OUTPUT AT 90MHz.	PRESS 'M2' TO 90MHz
5.	TRACKING 106MHz (FIG. 2)	AS STEP 2	AS STEP 2	AS STEP 1	ADJUST C407 TO GET MAX. OUTPUT AT 106MHz.	PRESS 'M4' TO 106MHz
6.	REPEAT STEP 4,5 AND THEN STEP 2,3,4,5 UNTIL NO FURTHER IMPROVEMENT CAN BE MADE.					
7.	TRACKING 98MHz (FIG. 2)	AS STEP 2	AS STEP 2	AS STEP 1	MAKE SURE THE OUTPUT AT 98MHz SHOULD BE WITHIN THE SPECIFICATION.	PRESS 'M3' TO 98MHz

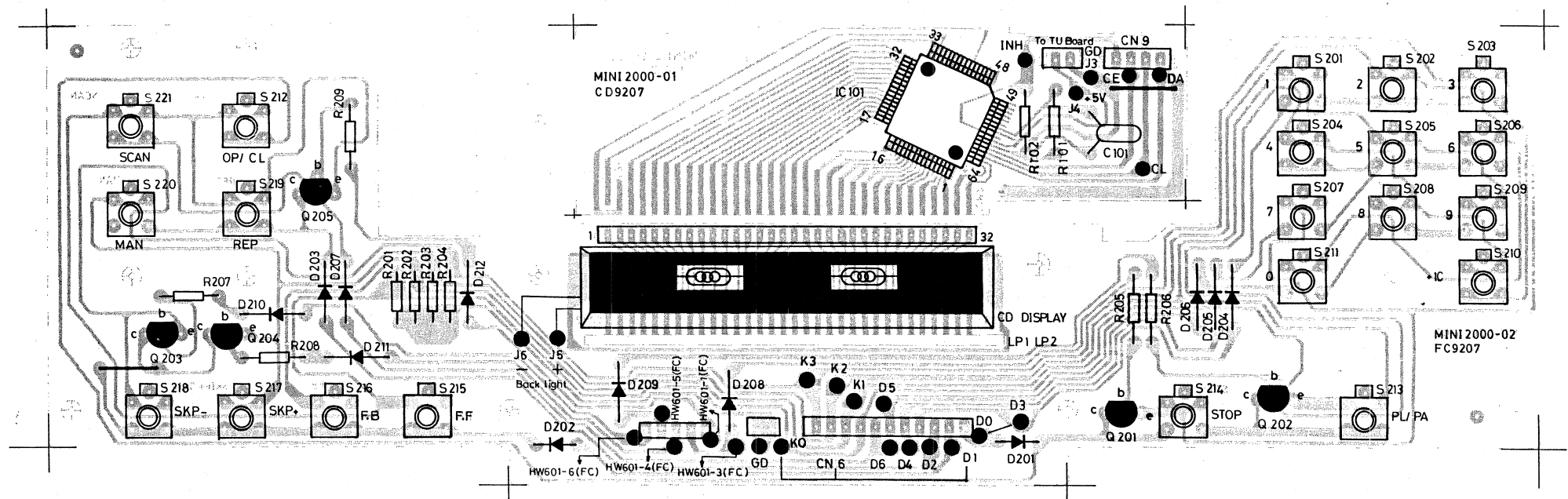
TUNER PCB COMPONENT LAYOUT



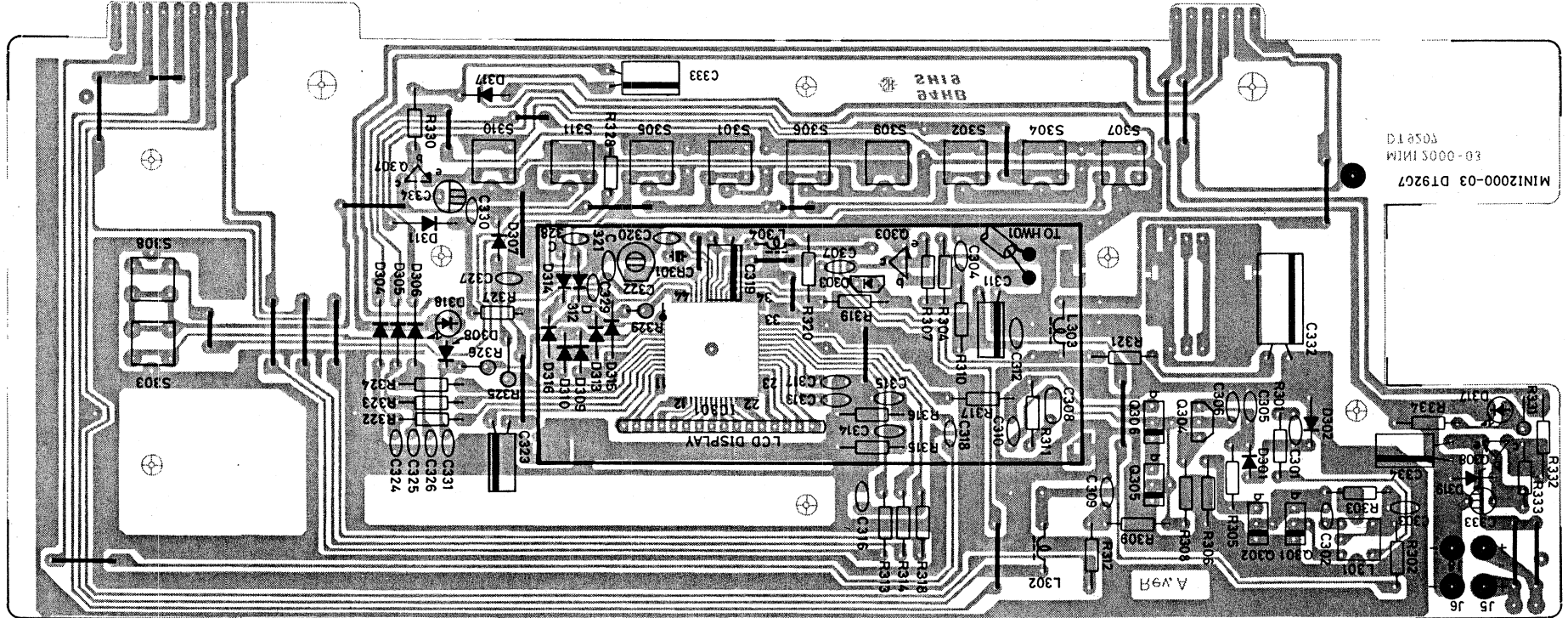
EQUALIZER & FUNCTION CONTROL PCB COMPONENT LAYOUT



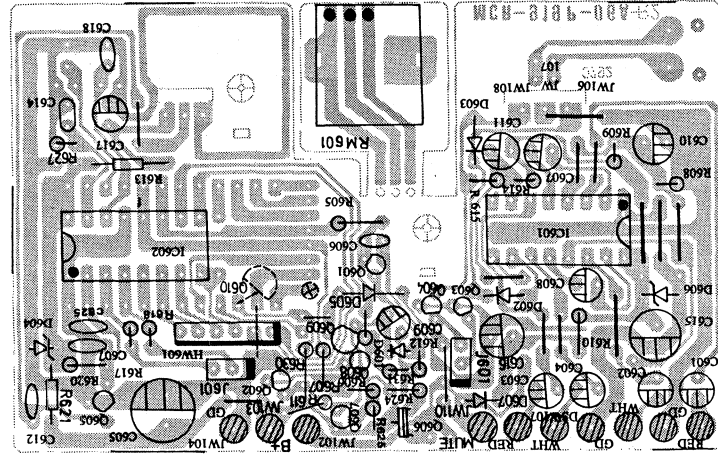
CD CONTROL & DISPLAY PCB COMPONENT LAYOUT



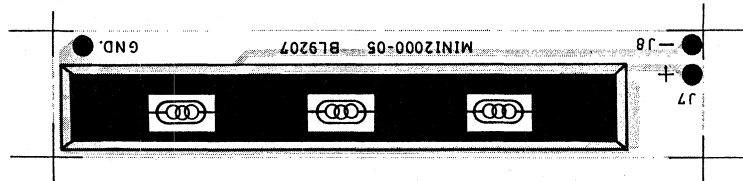
TUNER CONTROL & DISPLAY PCB COMPONENT LAYOUT



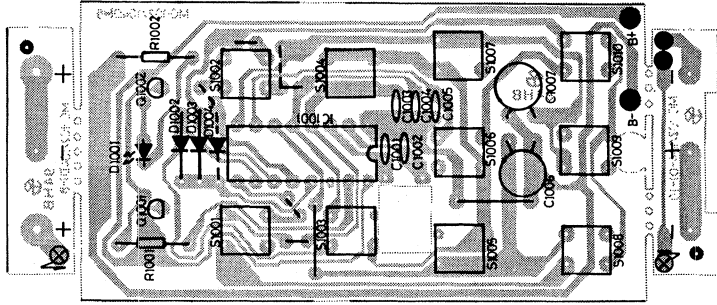
REMOTE PCB COMPONENT LAYOUT



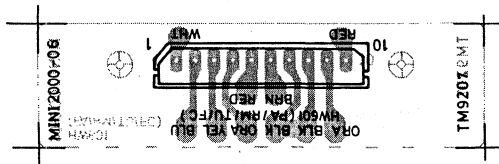
TUNER BACK LIGHT ASSEMBLY



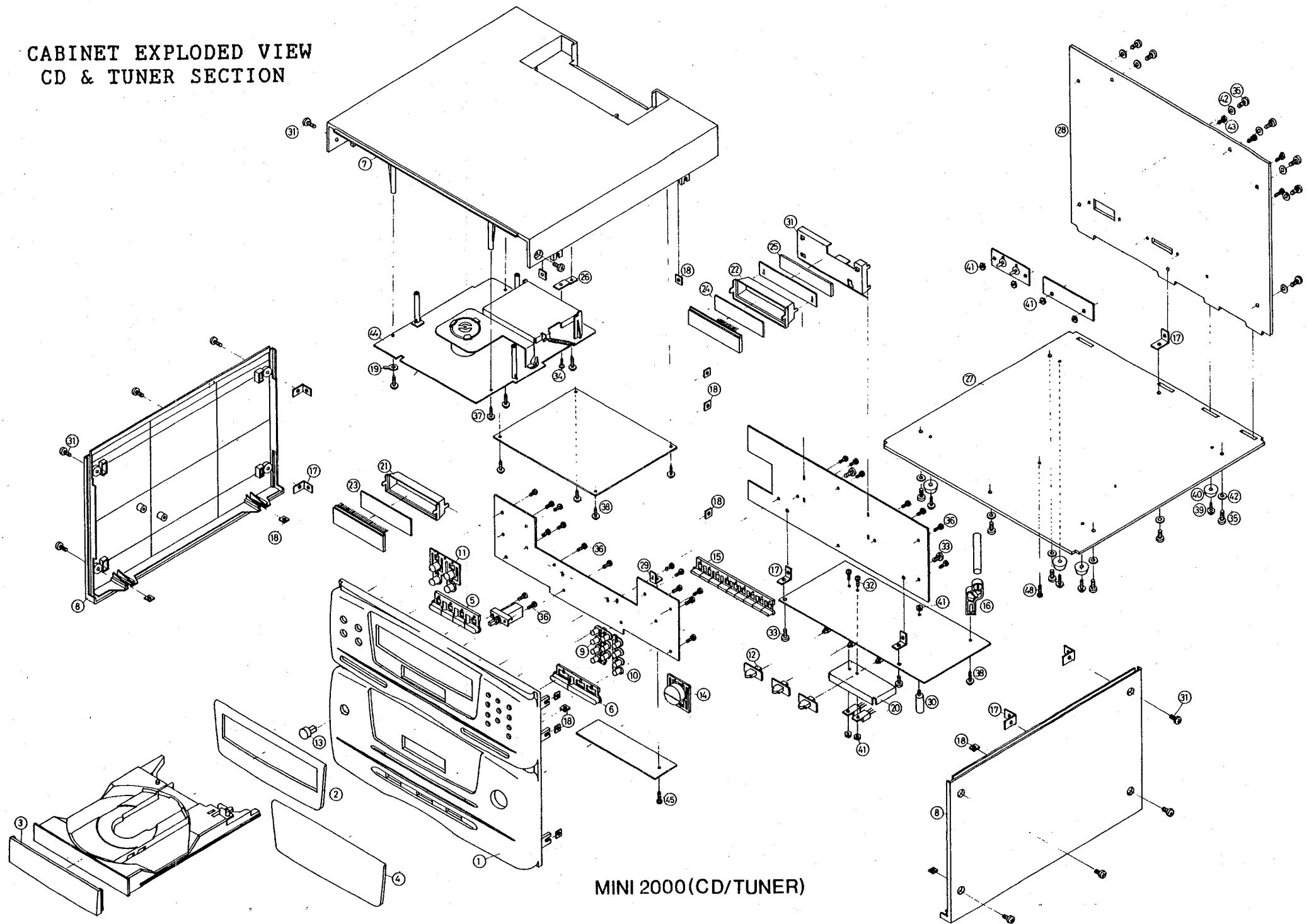
REMOTE CONTROL HAND SET PCB



INTERFACE PCB

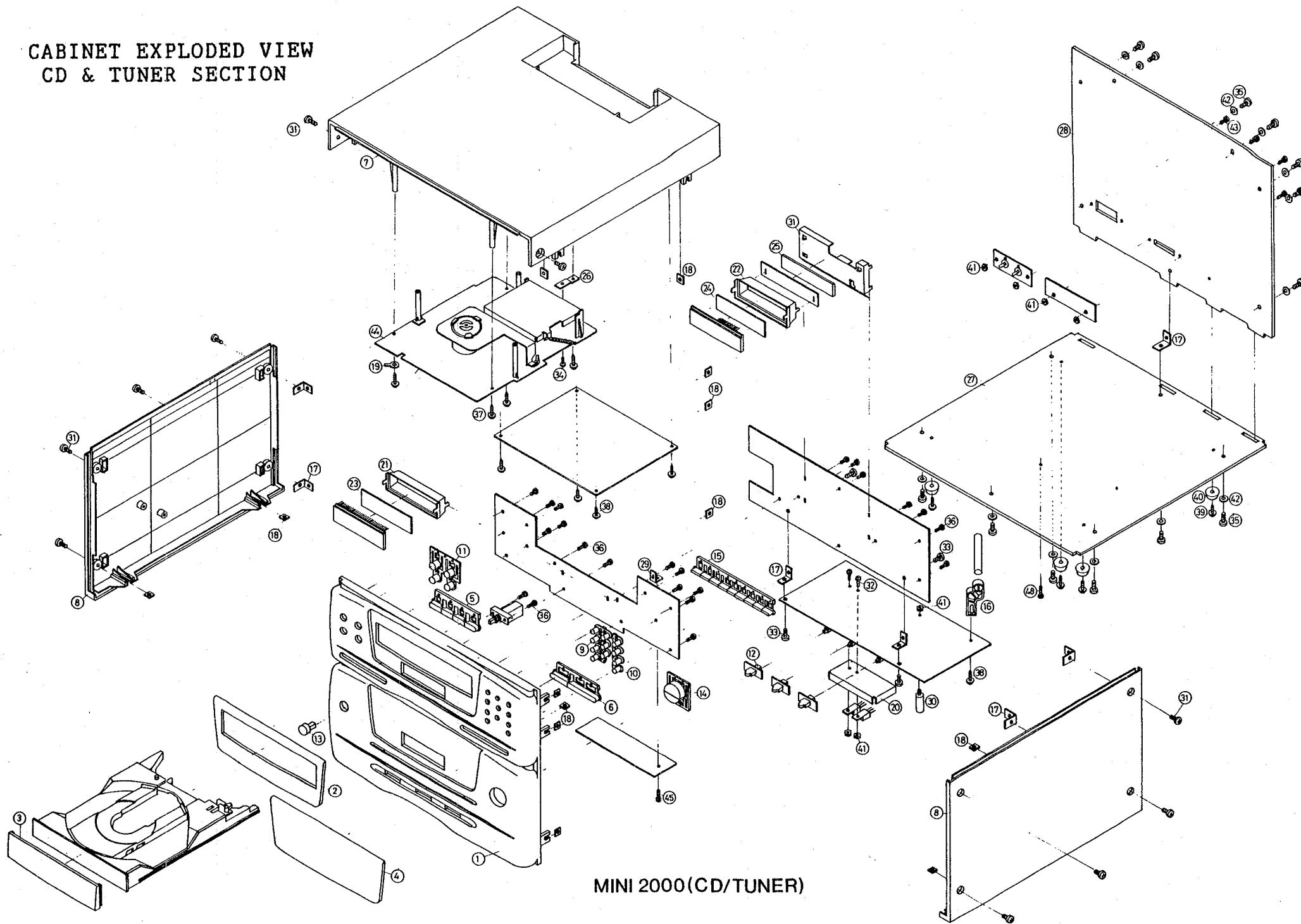


CABINET EXPLODED VIEW CD & TUNER SECTION

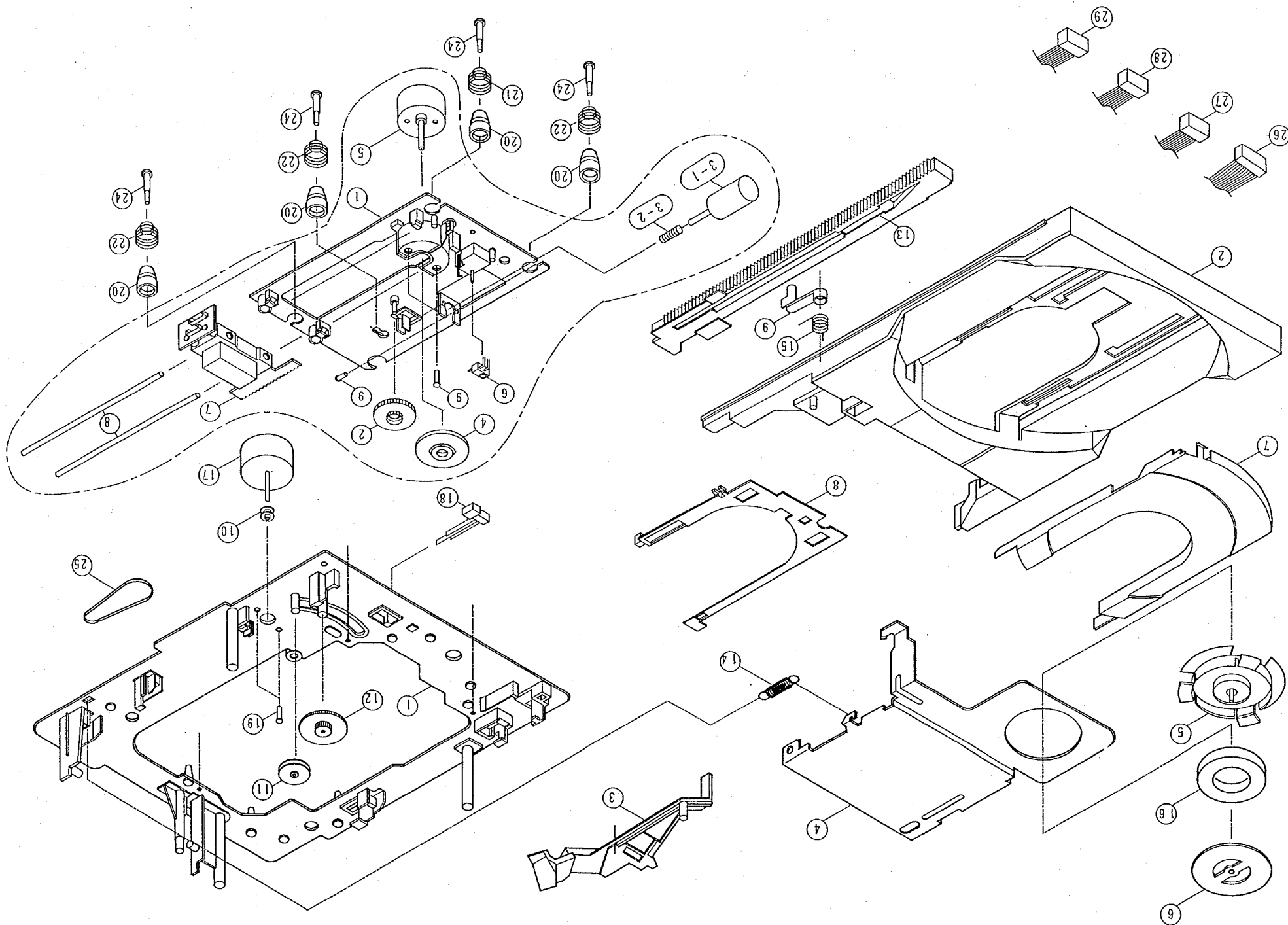


MINI 2000 (CD/TUNER)

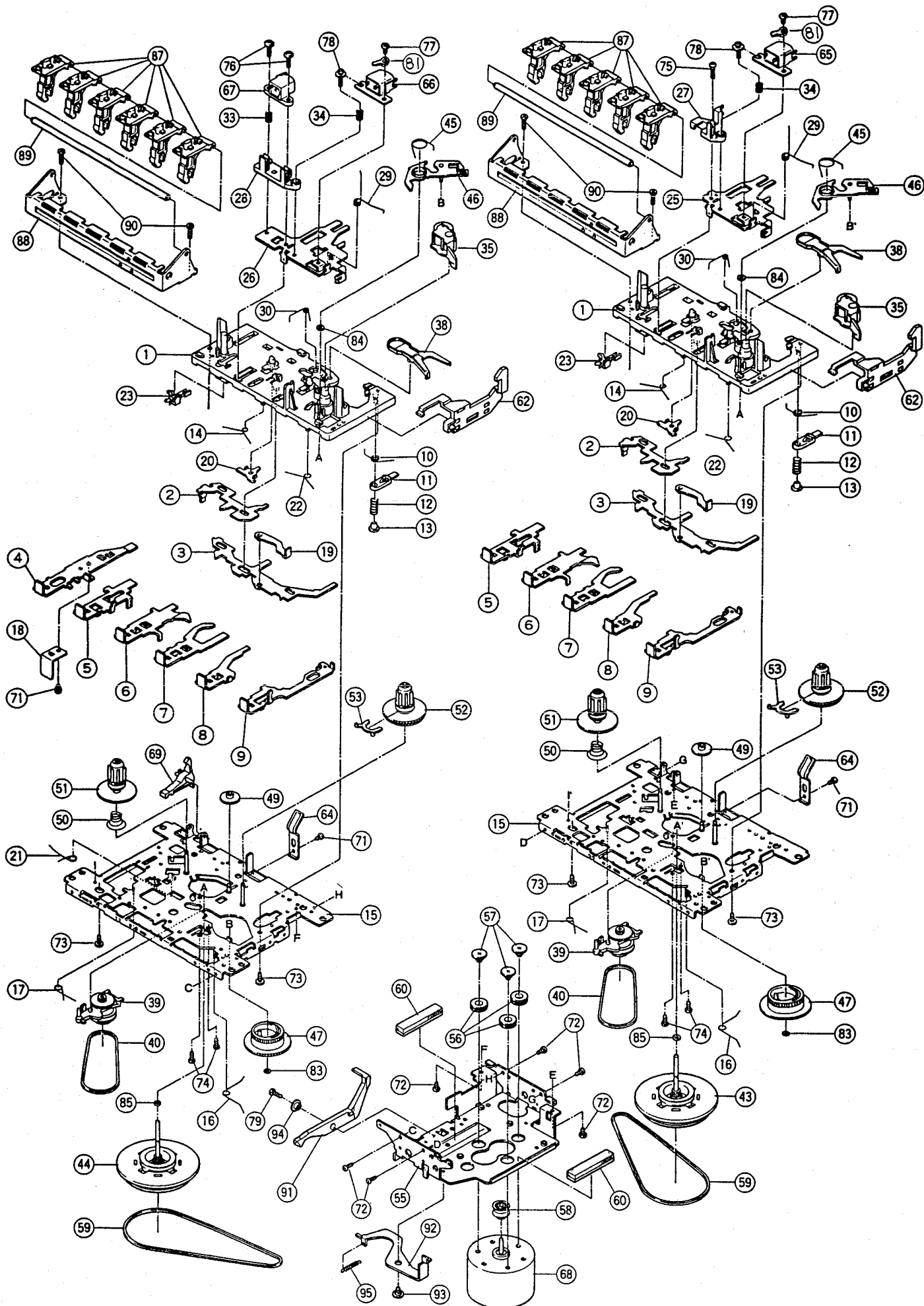
CABINET EXPLODED VIEW CD & TUNER SECTION



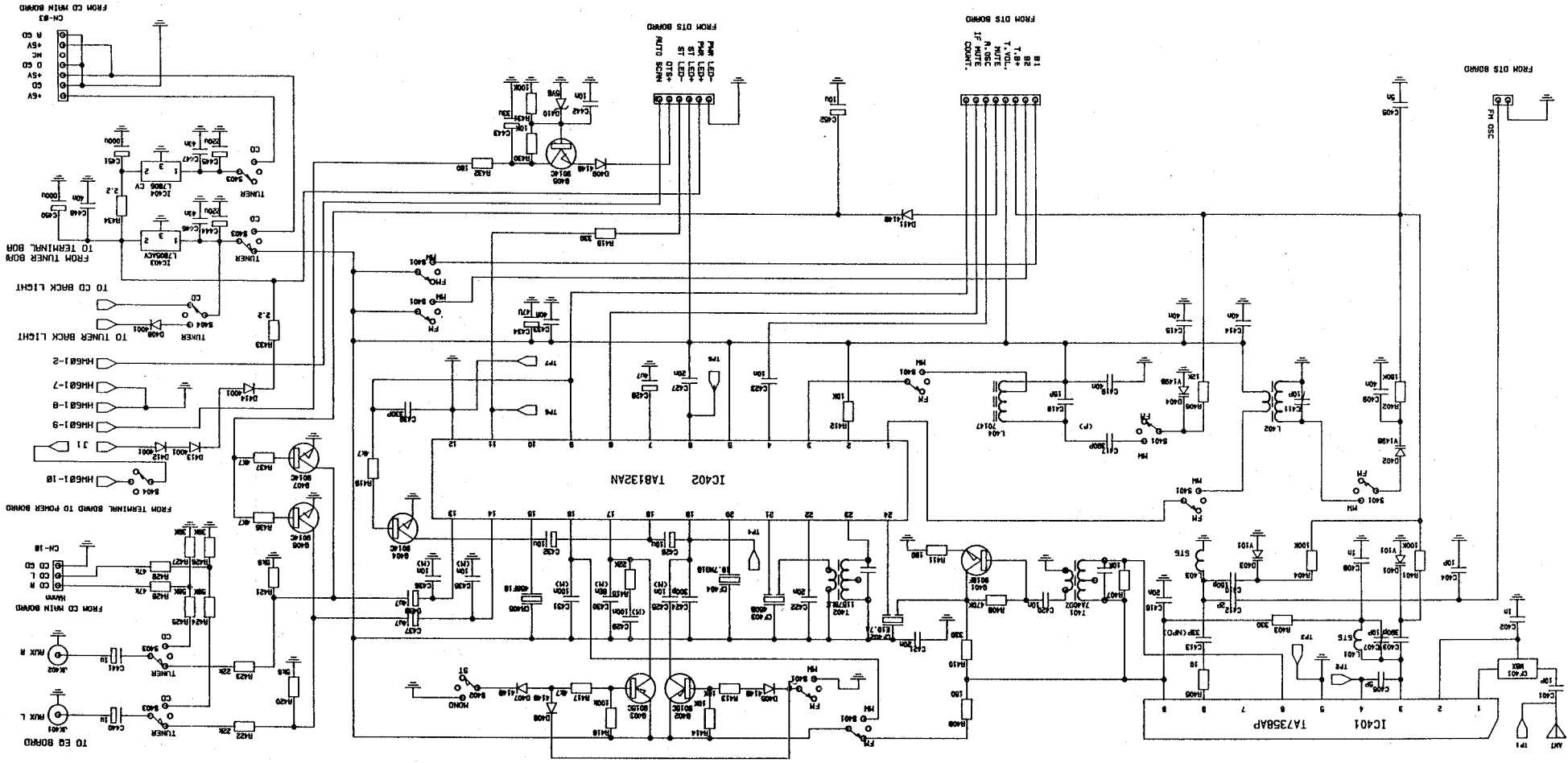
MINI 2000 (CD/TUNER)

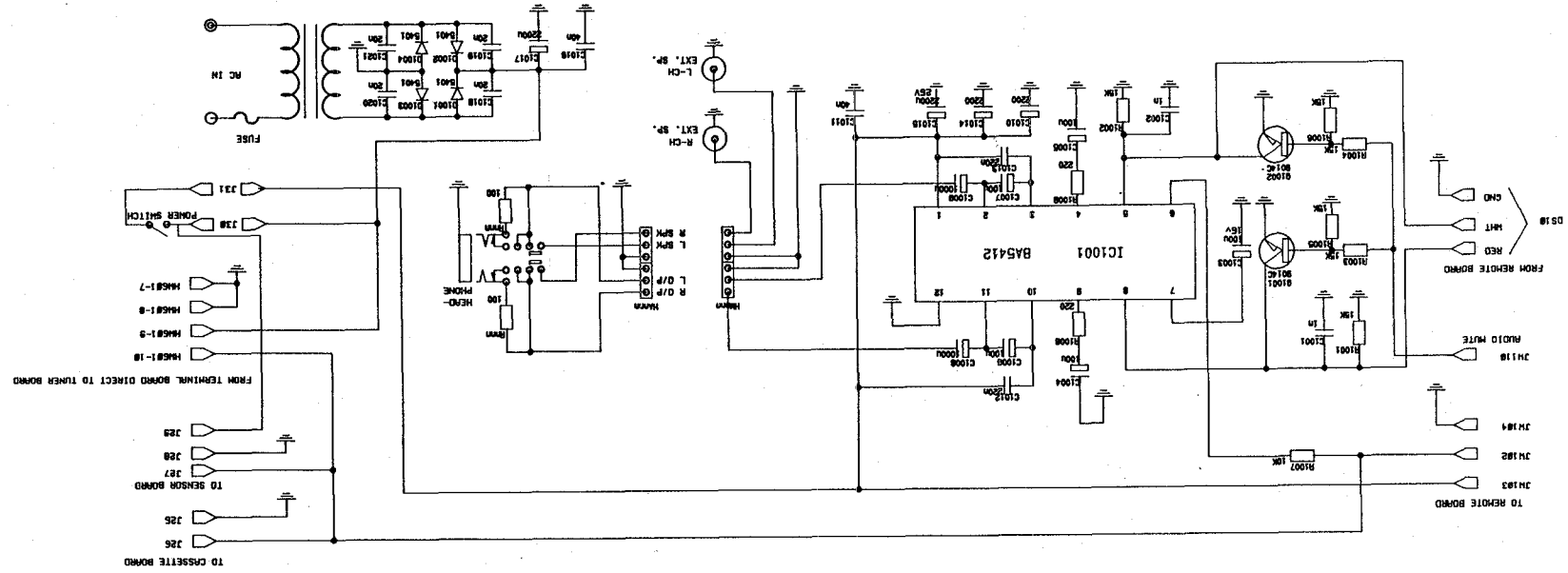


CD DECK EXPLODED VIEW

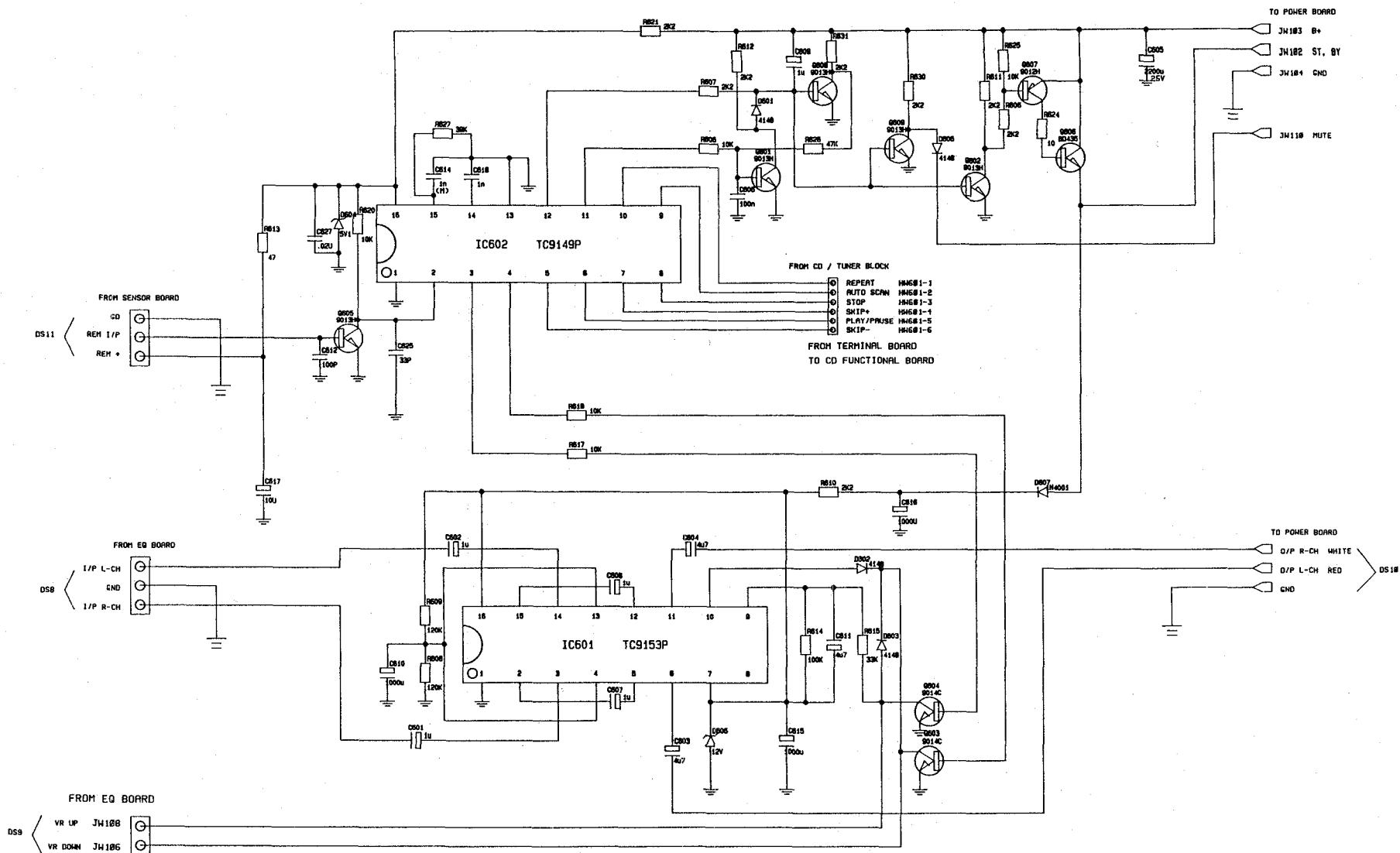


CASSETTE DECK MECHANISM EXPLODED VIEW





MINI 2000 REMOTE BOARD



MINI 2000 DTS BOARD

